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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,649	01/16/2004	Takeshi Takashima	118367	6352

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EXAMINER	
COLON, GERMAN	
ART UNIT	**PAPER NUMBER**
2879	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/758,649	TAKASHIMA ET AL.	
	Examiner	Art Unit	
	German Colón	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11-15* is/are allowed.

6)☒ Claim(s) *1-10 and 16-21* is/are rejected.

7)☒ Claim(s) *18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/16/04;6/17/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Preliminary Amendment

1. The Pre-Amendments, filed on January 16, 2004 and June 17, 2004, has been entered and acknowledged by the Examiner.

Claim Objections

2. Claim 18 is objected to because of the following informalities:

Claim 18, line 4 recites the limitation of "*an* organic bank *layers*". The Examiner notes the limitation should be either "*an* organic bank *layer*" or "organic bank *layers*".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 6, 8-10, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Taguchi (US 6,451,457).

Regarding claims 1, 16 and 17, Taguchi discloses a manufacturing method for an organic EL device comprising luminescent layers between an anode and a cathode (see at least Col. 11, lines 49-51), comprising the steps of: introducing at least one electron transport layer ETL forming material in a liquid phase process between the luminescent layer and the cathode; and forming electron transport layers on the luminescent layers (see Col. 14, line 45 to Col. 15, line 15).

Regarding claim 6, Taguchi discloses the ETL forming material being made of an organic metallic complex (see Col. 14, lines 58-60).

Regarding claim 8, Taguchi discloses the luminescent layers actualizing green-color emission (see at least the Examples in Cols. 17 and 18).

Regarding claim 9, Taguchi discloses the liquid phase process corresponding to a liquid-drop discharge process.

Regarding claim 10, Taguchi discloses the ETL having a thickness ranging from 0.1 nm to 20 nm (see Col. 14, lines 64-66).

5. Claims 1, 5 and 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Sasaki (US 2004/0169462).

Referring to claims 1, 16 and 17, Sasaki discloses a manufacturing method for an organic EL device (see Fig. 2) comprising luminescent layers **59** between an anode **58** and a cathode **63,** comprising the steps of: introducing at least one electron transport layer ETL forming material in a liquid phase process between the luminescent layer and the cathode; and forming electron

transport layers on the luminescent layers (see Page 1, paragraph [0012], lines 6-13; and paragraph [0069]).

Referring to claim 5, Sasaki discloses the organic EL layers actualizing blue-color emission (see Fig. 4, reference **3B** and respective description).

Referring to claim 18, Sasaki discloses discharging the liquid phase material inside an opening of an organic bank layer **61** arranged above the pixel electrode **58** (see Fig. 2)

6. Claims 1, 2, 4 and 17-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi (US 2004/0119406).

In regards to claims 1 and 17, Kobayashi discloses a manufacturing method for an organic EL device (see Fig. 3) comprising luminescent layers between an anode **111** and a cathode **12,** comprising the steps of: introducing at least one electron transport layer ETL forming material in a liquid phase process between the luminescent layer and the cathode; and forming electron transport layers on the luminescent layers (see paragraph [0007], lines 1-10). The Examiner notes that while the embodiment using LiF in a liquid phase process is not a preferred one, the reference still anticipates the claimed invention.

In regards to claim 2, Kobayashi discloses the ETL comprising a halide of an alkali metal (see paragraph [0007], line 5).

In regards to claim 4, Kobayashi discloses the ETL forming material being made of an aqueous solution including LiF (see paragraph [0007], lines 5-7).

In regards to claims 18 and 19, Kobayashi discloses discharging the liquid phase material including LiF inside an opening of an organic bank layer **112b** arranged above the pixel electrode **111** (see Fig. 3 in view of paragraph [0007]).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morrissy et al. (US 2002/0130612).

Regarding claims 3 and 4, Morrissy discloses the claimed invention as recited in claims 1 and 2 (see paragraph [0030], lines 1-4 and 11), wherein a solution of LiF is coated on an organic layer. Morrissy is silent regarding the limitation of the solution being either a dispersion solution or an aqueous solution. However, it has been held to be within the general skill of an artisan to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to use either a dispersion solution or an aqueous solution as the LiF solution of Morrissy, since the selection of known materials for a known purpose is within the skill of the art.

9. Claims 7, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi (US 6,451,457) in view of Miyashita et al. (US 2001/0001050).

Referring to claim 18, Taguchi discloses the claimed invention except for the limitation of the liquid material being discharged inside an opening of an organic bank layer.

However, in the same field of endeavor, Miyashita discloses a method of making an organic EL device including an ETL (see paragraph [0056]), said method comprising the step of discharging a liquid material inside an opening of an organic bank layer **105** (see at least Fig. 1) with the purpose of making it possible to carry out patterning easily and precisely, while optimizing a film design in a simple matter (see at least paragraph [0009]). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an organic bank layer in the device of Taguchi, in order to facilitate the patterning in an easy and precise manner, while optimizing a film design in a simple matter.

Referring to claim 20, Taguchi discloses an ETL composed of an organic metallic complex (see Col. 14, lines 49-61).

Referring claims 7 and 21, Taguchi-Miyashita discloses the claimed invention except for the limitation of the organic metallic complex comprising β-diketone complex. However, it has been held to be within the general skill of an artisan to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Thus, it would have been obvious to one having ordinary skills in the art at the time the invention was made to use β-diketone complex as the organic metallic complex, since the selection of known materials for a known purpose is within the skill of the art.

Allowable Subject Matter

10. Claims 11-15 are allowed.

11. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 11, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in the claim, and specifically comprising the limitation of introducing a first ETL forming material which is selected from among a halide or an oxide of an alkali metal, an alkali earth metal and a rare earth metal on the blue-color luminescent layer; and introducing a second ETL forming material including an organic metallic complex on the green-color and red-color luminescent layers.

Claims 12-15 are allowable for their dependency from claim 11.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 571-272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Joseph W Williams/

JOSEPH WILLIAMS
PRIMARY EXAMINER

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